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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/674,421

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Gee-Sung Chae

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EXAMINER

BODDIE, WILLIAM

ART UNIT

PAPER NUMBER

2629

MAIL DATE

DELIVERY MODE

11/20/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/674,421	Applicant(s) CHAE ET AL.	
	Examiner WILLIAM L. BODDIE	Art Unit 2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 September 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 4 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 4 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. In an amendment dated, September 1st, 2009 the Applicant amended claim 1 and cancelled claims 10-11. Currently claims 1 and 4 are pending.

Continued Examination Under 37 CFR 1.114

2. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on September 1st, 2009 has been entered.

Response to Arguments

3. Applicant's arguments filed September 1st, 2009 have been fully considered but they are not persuasive.

4. On page 5 of the Remarks, the Applicants argue that the combination of Shin and Sakamoto would be improper as to form the common and pixel electrodes on the same layer would result in short circuits.

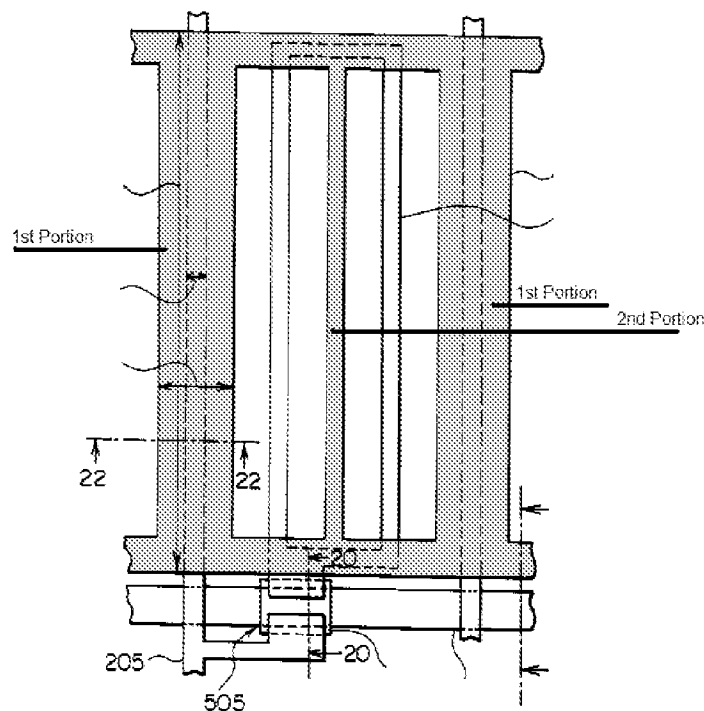
The Examiner must respectfully disagree. The test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981).

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In this case, Shin also teaches using contact holes which allow the common electrode to pass over the data line without short circuiting. Incorporation of this teaching or other well-known design tools, such as slightly modifying the design of the common electrode, would have certainly been available to one of ordinary skill in the art at the time. As such, the Examiner maintains that were one of ordinary skill in the art presented with the two applications they would arrive at a functional display having the currently claim limitations.

5. Also on page 5, the Applicants argue that the newly added limitations are not taught by the cited references.

The Examiner again respectfully disagrees. The following relabeled figure 24 of Sakamoto should help illustrate that Sakamoto discloses just the structure that is currently claimed.



As seen above and furthermore discussed in the updated rejections below, Sakamoto is seen as disclosing the newly amended claim limitations. Therefore the rejections are seen as sufficient and are maintained.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sakamoto et al. (US 6,069,678) in view of Shin et al. (US 6,356,328) and further in view of Lee (US 6,459,465).

With respect to claim 1, Sakamoto discloses, an in-plane switching mode liquid crystal display device, comprising:

a plurality of gate lines (105 in fig. 24) and data lines (205 in fig. 24) defining a plurality of pixels;

a thin film transistor (505 in fig. 24) in each of the pixels, the thin film transistor including a gate electrode (1405 in fig. 25) on a substrate (605 in fig. 25), an insulating layer (2405 in fig. 25) over the gate electrode, a semiconductor layer (1105, 2505 in fig. 25) on the insulating layer, a source electrode (1005 in fig. 25) and a drain electrode (905 in fig. 25) on the semiconductor layer;

a common line (part of 305 in fig. 24 that runs horizontally);

at least one pixel electrode (405 in fig. 24) having a predetermined width (clear from fig. 6) in each of the pixels; and

a common electrode (305 in fig. 24) in each of the pixels, the common electrode being substantially parallel to the pixel electrode (fig. 24), the common electrode including two first portions (left and right wide portions of 305 in fig. 24) disposed along the data line to cover complete the data line ($W_{com} > W_d$ in fig. 24) and only one second portion (skinny portion of 305 in middle of the pixel in fig. 24) disposed between the first portions (fig. 24), thereby each of the pixels including two areas defined by the first portion and the second portion (fig. 24 shows two different areas as here defined);

a passivation layer (2605 in fig. 25) over the source electrode, drain electrode and semiconductor layer, and

wherein the common electrode is disposed on the passivation layer (col. 10, lines 45-46; also note fig. 26).

Sakamoto does not expressly disclose, that the common electrode is connected to the common line, on the substrate, through a contact hole, nor that the common and pixel electrodes are disposed on the same layer.

Shin discloses, wherein a pixel electrode (16b in fig. 4) and a common electrode (15b in fig. 4) are disposed on the same layer (fig. 4), a common electrode (15b in fig. 3) and a common line (15a in fig. 3) on a substrate (col. 3, lines 13-14) are disposed on layers different from each other (col. 3, lines 6-14, 34-36) so that the common electrode is connected to the common line through a contact hole (C in fig. 3),

wherein the common electrode and the common line are not overlapped (clear from fig. 3) with a pixel electrode (16b in fig. 3) and the common line is separated a predetermined distance from the end portion of the pixel electrode (clear from fig. 3).

Shin and Sakamoto are analogous art because they are both drawn to structural components of LCD pixels.

At the time of the invention it would have been obvious to dispose the pixel and common electrodes on the same layer and to connect the common line and electrodes of Sakamoto via a contact hole as taught by Shin.

The motivation for doing so would have been to improve aperture ratio and brightness (Shin; col. 2, lines 16-22).

To further explain, Sakamoto discloses placing the common electrode on the passivation layer. Shin discloses placing both the common and pixel electrodes on the same layer. Therefore it seems obvious to place the pixel electrode on the same layer as the common electrode in the Sakamoto embodiment. Upon such a combination, both the pixel and common electrode will be disposed on the passivation layer.

Neither Sakamoto nor Shin expressly disclose that the passivation layer is made of an organic material including BCB and photoacryl.

Lee discloses, a passivation layer is made of an organic material including at least one material of BCB and photoacryl (col. 8, lines 43-50).

Lee, Shin and Sakamoto are analogous art because they are all from the same field of endeavor namely, LCD pixel design and manufacture.

At the time of the invention it would have been obvious to one of ordinary skill in the art to use the organic material taught by Lee to form the passivation layers of Shin and Sakamoto.

The motivation for doing so would have been the well known advantage of providing good flatness characteristics and low permittivity.

With respect to claim 4, Sakamoto, Shin and Lee disclose, the device of claim 1 (see above).

Sakamoto further discloses, wherein the data lines (905 in fig. 25/ 205 in fig. 24) are formed on the insulating layer (2405 in fig. 25).

Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to WILLIAM L. BODDIE whose telephone number is (571)272-0666. The examiner can normally be reached on Monday through Friday, 7:30 - 4:30 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sumati Lefkowitz can be reached on (571) 272-3638. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/William L Boddie/
Examiner, Art Unit 2629
11/20/09